

FOREST INSECT AND DISEASE MANAGEMENT UNIT  
U.S. FOREST SERVICE  
DORAVILLE, GEORGIA

REPORT OF AERIAL DETECTION SURVEY

LAND OWNERSHIP OR SURVEY AREA: Delta National Forest

STATE: Mississippi

AREA WITHIN SURVEY BOUNDARY: 118,200 acres

DATE SURVEYED: 8/13/77

PERCENT COVERAGE: 50%

AIRCRAFT: Aero Commander

CREW: R. F. Bassett

SURVEY OBJECTIVES: To determine the location and extent of reported hardwood defoliation within the boundaries of the Delta National Forest.

SURVEY RESULTS

1. Two types of hardwood defoliation on 88,500 acres within the Delta National Forest boundaries were found.
  - a. Complete removal of foliage on 9,700 acres near the center of the National Forest (see map).
  - b. Leaf skeletonization which appeared as brown foliage on 78,800 acres scattered throughout the northern three-fourth's of the National Forest (see map).
2. No damage was seen on 28,900 acres in the southern part of the National Forest.

DISCUSSION

Insect specimens from the defoliated area were collected by National Forest personnel and sent to the Southern Hardwoods Laboratory in Stoneville, Mississippi for identification. Positive identification of the pink-striped oakworm, *Anisota virginensis* (Drury) was made, with tentative identification of the orange-striped oakworm, *Anisota senatoria* (J. E. Smith) noted. These species of

*Anisota* frequently occur together in a defoliation complex. The larvae of both insects feed primarily on *Quercus* sp., but are also capable of defoliating other hardwoods. The adults appear from June to August. Eggs hatch approximately one and one-half weeks after being deposited on the underside of host leaves. The larvae feed on all the foliage except the large veins, through October. Immediately before pupation the larvae crawl from the foliage and burrow in the soil. Pupation and overwintering occur in earthen cells. There are two generations per year.

The browned foliage seen during the survey is a result of several species of *Lithocolletis*, oak leaf miners. The larvae of these insects feed between the upper and lower leaf surfaces, creating mines. The larvae live in these mines and overwinter as larvae or pupae in the leaves after leaf fall. In areas of heavy infestation, premature leaf fall and refoilation are common. (see photo)

#### CONCLUSIONS

1. The impact of these insects to the Delta National Forest is unknown. Loss of tree vigor and growth rate may be affected by the defoliation. Several years of severe defoliation could cause mortality.
2. The two types of defoliation seen in this survey have occurred in this area in the past. Defoliation caused by *Anisota* sp. and *Lithocolletis* sp. can be expected to occur again in 1978 because;
  - a. These insects are cyclic and several years of increasing populations occur before the populations decline.
  - b. There is a large amount of host type in the Delta National Forest.
3. National Forest personnel should continue field surveillance to monitor changes in insect activity and damage on the Delta National Forest.
4. An aerial evaluation should be conducted by the USFS Aerial Survey Team during the summer of 1978.

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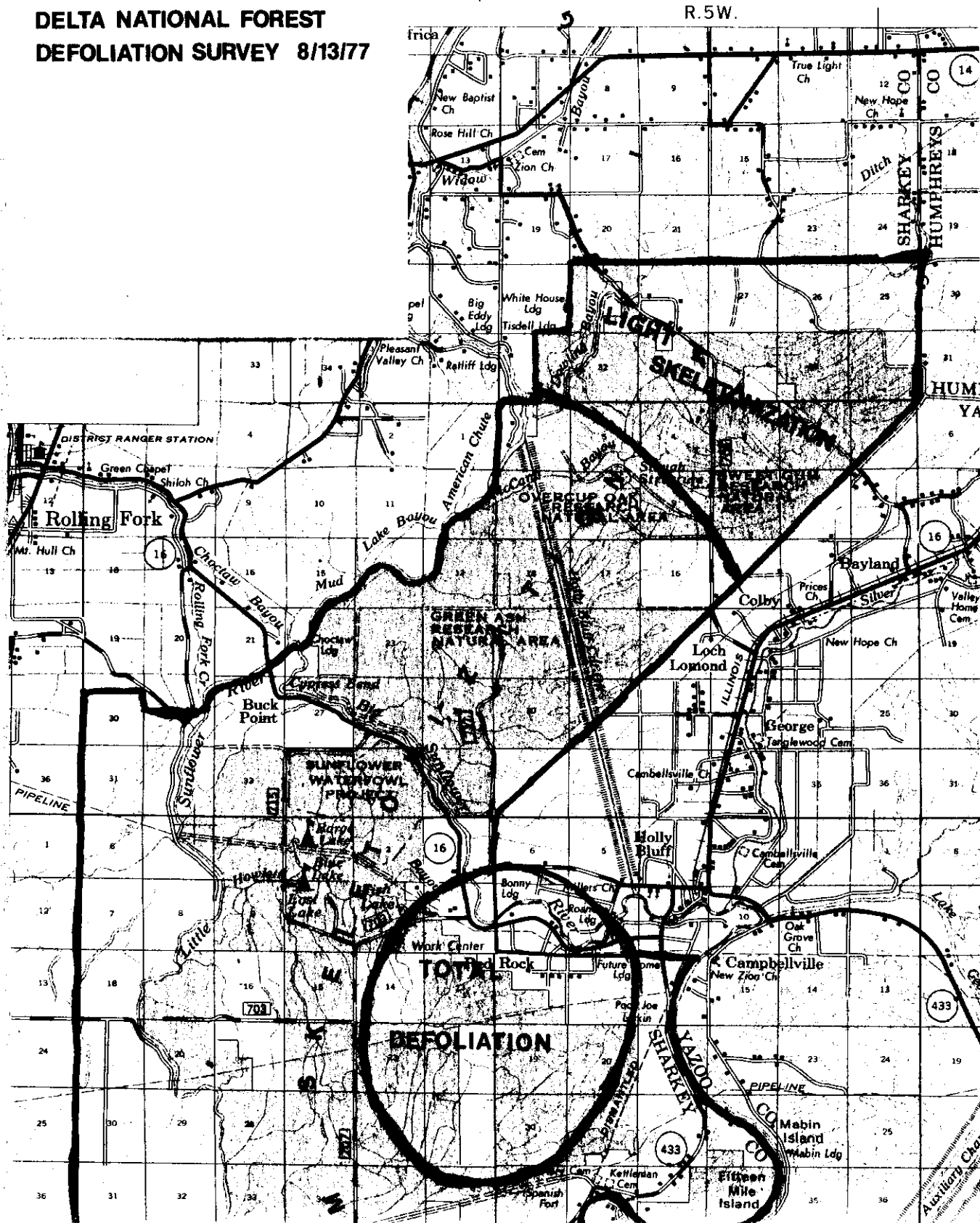
For any additional information, Contact

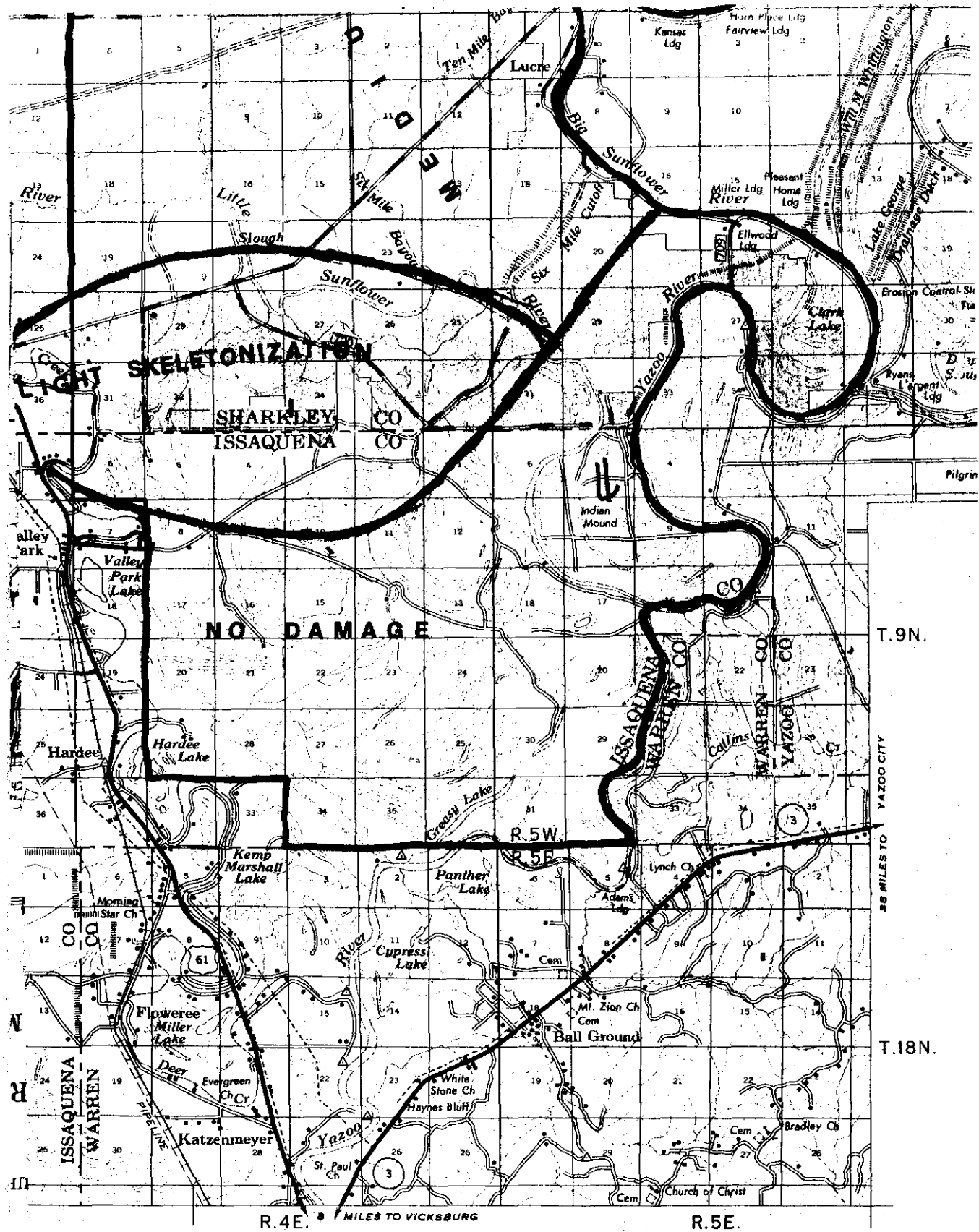
Forest Insect & Disease Management Unit, S&PF  
USFS - Southeastern Area

Northgate Office Park, Room 2103  
3620 Interstate 85, N.E.  
Doraville, Ga. 30340  
Telephone: 404-221-4796

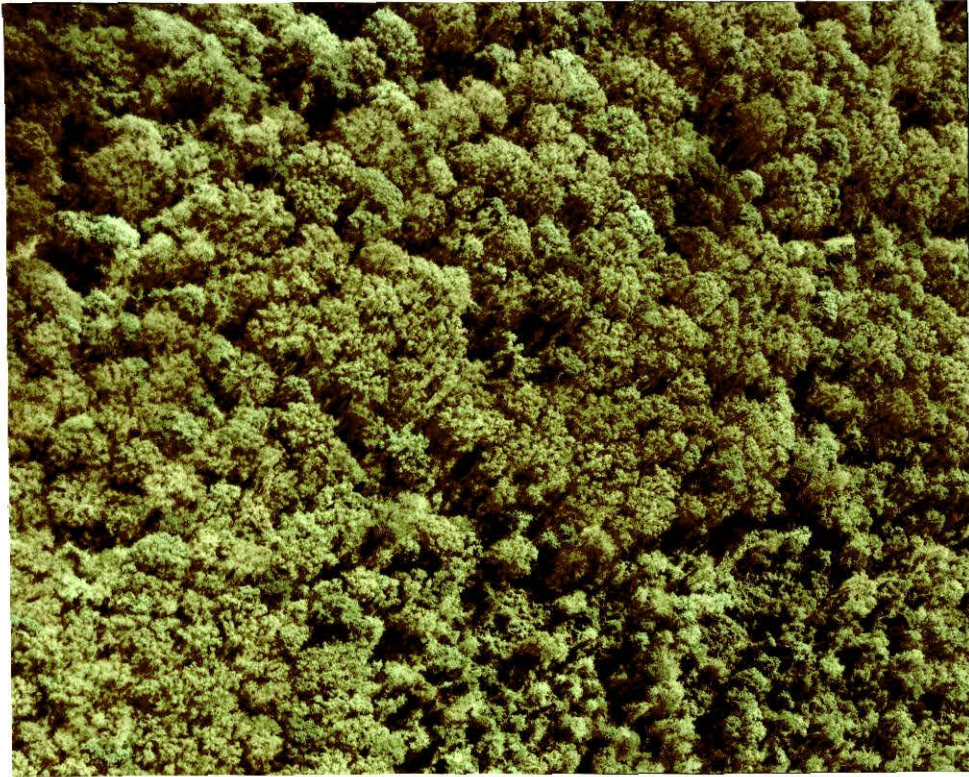
or 2500 Shreveport Highway  
Pineville, La. 71360  
Telephone: 318-445-6511

# **DELTA NATIONAL FOREST DEFOLIATION SURVEY 8/13/77**





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**Lithocolletis sp. Damage**